growth forms. The number of genera and species of such major groups as ferns, gymnosperms and monocotyledons is low when compared to floras of other areas. The eighteen species of the genus *Cheilanthes* make it the largest of the fern genera present, and the peculiar genus *Ephedra,* with only six species, has two more than the total for *Taxodium* and *Juniperus,* the two other genera of gymnosperms represented in the flora. There are 61 genera of grasses, about two thirds of the number in Munz's *A California Flora* or in *Gray's Manual,* and many of these are represented by but a single species. From this, it is obvious that the grass representation is not well developed. As expected, a genus like *Agave* is diversified, having 21 species, but on the whole the monocotyledons are not the prominent elments of the flora. The predominant role is played by dicotyledons, the major group that exceeds all others in abundance and diversification. Such genera as *Dalea* and *Euphorbia* match or exceed genera of the Cacti in numbers of species. I am always impressed by the heavy reprsentation of families such as the Malvaceae in the desert flora but the real shockers are in little known families such as the Fouquieriaceae with its bizarre *Idria columnaris* or the peculiar *Pachycormus discolor* of the Anacardiaceae. One expects the many shrubs and small trees of the Leguminosae, but personally I was much impressed with the woody members of families such as the Euphorbiaceae and Capparidaceae, whose temperate members tend to be herbaceous. We tend to think of such giant Cacti as *Carnegiea* and *Pachycereus,* and the tree Yuccas in connection with the Sonoran Desert but they are only a small part of the great complex of annuals, perennials, succulents, small trees and above all shrubs of many kinds and descriptions that make up the whole.

It is true, the desert has a fascination that is hardly describable and I can understand the repeated beckonings that have pulled the authors of these fine volumes again and again within its borders. Even one trip of six weeks duration into Sonora with Professor Wiggins left an indelible impression on me. I often recall the vivid sunsets, the long, quiet dusk and the grotesque shapes of plants and horizons as the night came on, the tin cups set on the roof of the Model A station wagon to cool their liquid contents, or the treachery of an otherwise innocent playa after a sudden downpour of rain. The books under review do not tell of these things but they do contain the content that makes the desert appreciable when their storehouse is appropriately tapped.

The volumes are well designed, printed and manufactured. The Stanford University Press is to be congratulated for their interest and leadership in producing these and other finely executed botanical volumes. It is trite to say that these excellent books are a must for everyone interested in the Sonoran Desert. They are that and more. They contain information not easily obtained elsewhere and provide a standard of comparison for work on other deserts of the world. They bring together for the first time and make comprehensible the ingredients of knowledge necessary for an understanding of many aspects of the plant cover of a large and very interesting area. The groundwork has been carefully laid bare by the authors, who have prepared the way for others to continue the process of building our fund of knowledge of this great desert. — Reed C. Rollins, Gray Herbarium of Harvard University, Cambridge, Mass.

NOTES AND NEWS

Edwin Bingham Copeland. — Dr. Copeland died in Chico, California, on March 16, 1964 at the age of 91. He was well known to members of the California Botanical Society and served as its president in 1944. Dr. Copeland received his A.B. from Stanford University in 1895 and his Ph.D. from the University of Halle the following year. Prior to going to the Philippines in 1903, he taught briefly at

Chicago, Wisconsin, Stanford, California State Normal School at Chico, Indiana, and West Virginia. During his stay in the Philippines he served as dean and professor at the Philippines College of Agriculture. He was manager of the herbarium at the University of California, Berkeley, from 1928 to 1932 and in 1935 he was appointed Research Associate in Botany. In agriculture circles, Dr. Copeland is remembered as an expert in tropical agriculture, particularly with respect to the growing of rice. Among taxonomic botanists he is remembered as a great pteridologist and his *Genera Filicum* is present in the libraries of most of them.

Notes on the Flora of Arizona. III.—Since the publication of the Howell and McClintock supplement to Kearney and Peebles' *Arizona Flora* in 1960, some interesting additional plant species and range extensions have come to my attention. This paper is journal article no. 838 of the Agricultural Experiment Station, University of Arizona.

Nuphar polysepalum Engelm. (*Nymphaea polysepala* Greene) was collected in Woods Canyon in the stream below the dam of Woods Canyon Lake, Sitgreaves National Forest, Coconino County (*Mason, Phillips,* & *Niles 2273*, ARIZ). The specimens represent the first and so far only record of the Nymphaeaceae in Arizona. Our attention was directed to the area by an inquiry from Margaret Schmidt.

Hypericum anagalloides C. & S. (*Mason, Phillips,* & *Niles 2270*, ARIZ) and *Viola palustris* L. ssp. *brevipes* Baker (*Mason, Phillips,* & *Niles 2269*, ARIZ) were collected along the stream also in Woods Canyon. This small prostrate *Hypericum* is abundant along the stream. It is a northern species ranging along the Pacific Coast to British Columbia and eastward to Montana. This collection is the second record for Arizona; the previous report is a series of collections by L. N. Goodding from V. T. Park on the North Rim of the Grand Canyon, about 250–300 airline mi to the northwest. Russell reported the first collection of *Viola palustris* from Arizona (Rhodora 65:49. 1963). The collection from Woods Canyon represents a second locality for this species. Not much extension of range is involved, however, for the two areas are only about three miles apart and are within the same drainage system.

Asclepias cryptoceras Wats. was collected along the road from Kaibito to Inscription House, 15 miles from Inscription House at the base of White Butte (Mesa), Coconino County (*Mason* & *Phillips 1942*, ARIZ). The previous single record of this species in Arizona was from Pipe Springs, Mohave County. The new collection represents an eastward extension of the range of about 100 mi.

Arnica foliosa Nutt. (*A. chamissonis* Less. ssp. *foliosa* (Nutt.) Maguire) was collected at Crescent Lake, White Mountains, Apache County (*Haskell s. n.*, July 13, 1958, ARIZ). The previous reports of this species in Arizona were from the Kaibab Plateau and the North Rim of the Grand Canyon. The new location represents a range extension of about 250–300 airline mi eastward; however, a collection is known from Washington Pass, Chuska Mountains, San Juan County, New Mexico (*McKnight 58080209*, ARIZ), a distance of about 150 mi northeast of Crescent Lake.—Charles T. Mason, University of Arizona Herbarium, Tucson.